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ABSTRACT

Although most health education programs have focused on knowledge as the major outcome, there is conflicting information about the impact of knowledge-based programs on health behaviors. This study compared student health knowledge and health practices by administering tests and questionnaires to 1,371 students in grades three and six, and junior and senior high school students in Hawaii. Pedestrian safety was addressed in grades three and six; nutrition and physical exercise were addressed at all grade levels participating in the study; alcohol and drug abuse were studied in secondary school students only. Fifty-seven teachers were also surveyed about their teaching strategies. Discrepancies were found between knowledge and practice in the the subject areas of pedestrian safety, nutrition, physical exercise, and substance abuse. Generally, levels of behavior were notably lower than levels of knowledge. Students showed the greatest knowledge deficits in substance abuse. Low percentages of students practiced good nutrition and were physically active. Approximately one-half of the teachers reported that they included the teaching of health-related skills in their curriculum. (Author/NB)

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DISCREPANCIES BETWEEN STUDENTS' HEALTH EDUCATION KNOWLEDGE AND HEALTH PRACTICE

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ABSTRACT

To compare student health knowledge and health practices, tests and questionnaires were administered to 1,371 Hawai'i students in grades three and six, and junior high school and senior high school. Fifty-seven teachers were also surveyed about their teaching strategies. Discrepancies between knowledge and practice were found in the subject areas of pedestrian safety, nutrition, physical exercise, and substance abuse. Generally levels of behavior were notably lower than levels of knowledge. Students showed the greatest knowledge deficits in substance abuse. Low percentages of students practiced good nutrition and were physically active. About half of the teachers reported that they included the teaching of health-related skills in their curriculum.

INTRODUCTION

REVIEW OF LITERATURE. Although most health education programs have focused on knowledge as the major outcome, there is conflicting information about the impact of knowledge-based programs on health behaviors (Prue et al., 1987). Recently some programs have begun to focus on behavior as the critical variable in health education efforts (Stone, 1985; Wynder & Prue, 1985). Outcome evaluations, however, for these more comprehensive programs have been limited in number. One study (Lemmers, et al., 1984) found changes in decision-making skills despite no changes on a knowledge test. Flora et al. (1986) found that a behaviorally oriented health education curriculum brought about greater changes in knowledge as well as behavior than did the more conventional curriculum.

A relationship between health knowledge and health behavior has been found in various studies (Iverson & Portnoy, 1977; Bruhn & Parcel, 1982); however, very little is known about the relationship between these two variables among youth from ethnic minorities (Riggs & Noland, 1984). Cited among the "mitigating circumstances" that influence students' health behaviors were parental behavior, family structure, role modeling, religion, and economic level (James, 1984).

STATEMENT OF PURPOSE. The main objective of this study was to compare the health knowledge and health practices of the students enrolled in the required state-wide Health Education Program in the Hawai'i State Department of Education (DOE).

Health education is any combination of learning experiences designed to facilitate voluntary adaptations of behavior conducive to health.[1] Health behaviors are influenced by a multitude of factors. These factors can be seen as predisposing, enabling, and reinforcing (Prue et al., 1987).

Predisposing factors are those that provide reasons and motivation for the desired behavior. These include knowledge, attitudes, belief and values.

Enabling factors are those that allow the realization of the desired behavior. Skills, resources, and curriculum are among the enabling factors in health education.

Reinforcing factors are those that encourage the behavior in daily life. Attitudes, behaviors, and knowledge of teachers, parents and peers are included in this category of factors.

This study primarily compared student knowledge and practice. A secondary objective of the study was to look at the predisposing factor of students' attitudes toward health and the class/lessons. Two enabling factors--lessons involving awareness of values, attitudes or beliefs and lessons in decision-making and problem solving, were also addressed.

Students' time on classroom learning tasks, a predisposing and enabling factor, was also included in the study. Students' involvement in class assignments depend on the students' inclination to do the work and the teacher's ability to engage them in the lesson.

The study considered the following questions:

(1) How does students' health knowledge compare with their health practices?
(2) What are students' attitudes toward health and their health class/lessons? Are these attitudes helping or hindering student learning and the adaptation of positive health behaviors?
(3) Do teachers include awareness of values, attitudes, and beliefs in their health curriculum? Do they include decision-making and problem solving skills?
(4) Are students engaged in their classroom assignments? Is student engagement time related to learning and adapting positive health behavior?

The study was confined to the health subject areas of pedestrian safety, nutrition, physical exercise and substance abuse. Pedestrian safety was addressed in grades 3 and 6. Nutrition and physical exercise were addressed in grades three, six, junior high and high school. The study includes data regarding knowledge of and use of alcohol and marijuana among junior high school students. A comparison between the knowledge of and use of "other drugs"[2] among junior high and high school students was also included.

METHOD

SUBJECTS. Health education is required in kindergarten through grade six and as one-semester courses at the junior high and high school levels. Fifty-six randomly selected classes from grades 3 and 6, and junior high and high school participated in the study. There was a total of 1,371

students from the seven school subdistricts of the state. There were about an equal number of males and females. The junior high school students were seventh or eighth graders, and most of the high school students were ninth or tenth graders.

DESIGN. The research study was part of an evaluation of the State's Health Education Program. Because of the complexity of the program, the evaluation design included an emphasis on naturalistic data collection to supplement the more traditional collection of data on paper-and-pencil instruments. In addition a responsive evaluation approach such as advocated by Guba and Lincoln (1981) and which emphasizes audience concerns and issues was taken.

DATA COLLECTION INSTRUMENTS. Questionnaires, tests, and systematic observations were used to collect the data. Students were tested on health knowledge and surveyed on personal health practices and attitudes toward health. The evaluation team conducted classroom observations during which data were collected on teaching strategies and student engagement or academic learning time.

Four instruments were used to assess students' knowledge, one for each grade level. The third and sixth grades assessment questions were adapted from currently used DOE tests. Questions on the junior high and high school assessments were developed by the DOE Planning and Evaluation Services Branch and the DOE Test Development Section.

Three instruments were developed to assess students' health practices and attitudes toward health--one for the third grade, another for the sixth grade and the third instrument for the secondary education grade levels. A few questions were adapted from the DOE's Health Education Survey.[3]

The elementary school pupils were asked whether they were cautious when crossing the street or walking along the street.

The third graders were asked if they ran skipped, swam, jumped or did other physical activities when they played. The other three grade levels were asked if they participated in physical activities three or more times a week for 20 to 30 minutes each time.

The following item was administered to all students to determine their health practices in nutrition: The foods I choose to eat everyday are those which are good for my health. (Always true, usually true, sometimes, or never).

To determine the rate of use of alcohol, marijuana and "other drugs"[2], the students reported whether they never used the substances, they used the substances once only, they sometimes or often used the substances, or they don't use the substances anymore.

The observation procedure and data collection form were adapted from a system developed by the Far West Laboratory for Educational Research and Development (Tikunoff, 1983). A written questionnaire to collect data on teaching strategies used in the classroom was developed for teachers.

PROCEDURE. The student knowledge and practice assessments were administered by the teachers during the last month of the school year. The questionnaires inquiring about students' health habits and related attitudes were completed anonymously. The assessment questions were read to the third graders by their teachers, and the students responded by marking answer sheets. Teachers returned their surveys by mail.

Half of the classes were observed twice, once in the beginning of the spring semester and a second time at the end of the semester. Four students in each class observed were randomly chosen to be the subjects from which academic engagement time data were gathered. Information on each student was recorded in two-minute intervals. Logistics and limited resources prevented the evaluation team from observing all the classes twice.

RESULTS

Comparison of Knowledge and Practice. Results of the study are reported by health area: Pedestrian safety, nutrition, physical exercise and substance abuse.

PEDESTRIAN SAFETY. Almost all of third graders correctly responded to the test items regarding pedestrian safety (97.8% and 99.2%), but only 80% said they always or usually practiced safety when they crossed or walked along streets.

The percentage of sixth grade students with the correct response to the pedestrian safety questions and the percentage of sixth graders that said they always or usually were cautious when crossing or walking along the streets were about the same, 86.5% and 83.2% respectively. (See Figure 1).

NUTRITION. All four grade levels were tested on their nutrition knowledge and asked about their eating habits. Among the grade three students 85.1% answered the knowledge question correctly, but only 58.0% said they always or usually chose to eat foods good for their health. The sixth graders were asked two questions about nutrition. On one item 84.0% of them responded with the correct answer and on the other 78.7%, but only 58.1% of the students said they always or usually chose to eat food good for their health.

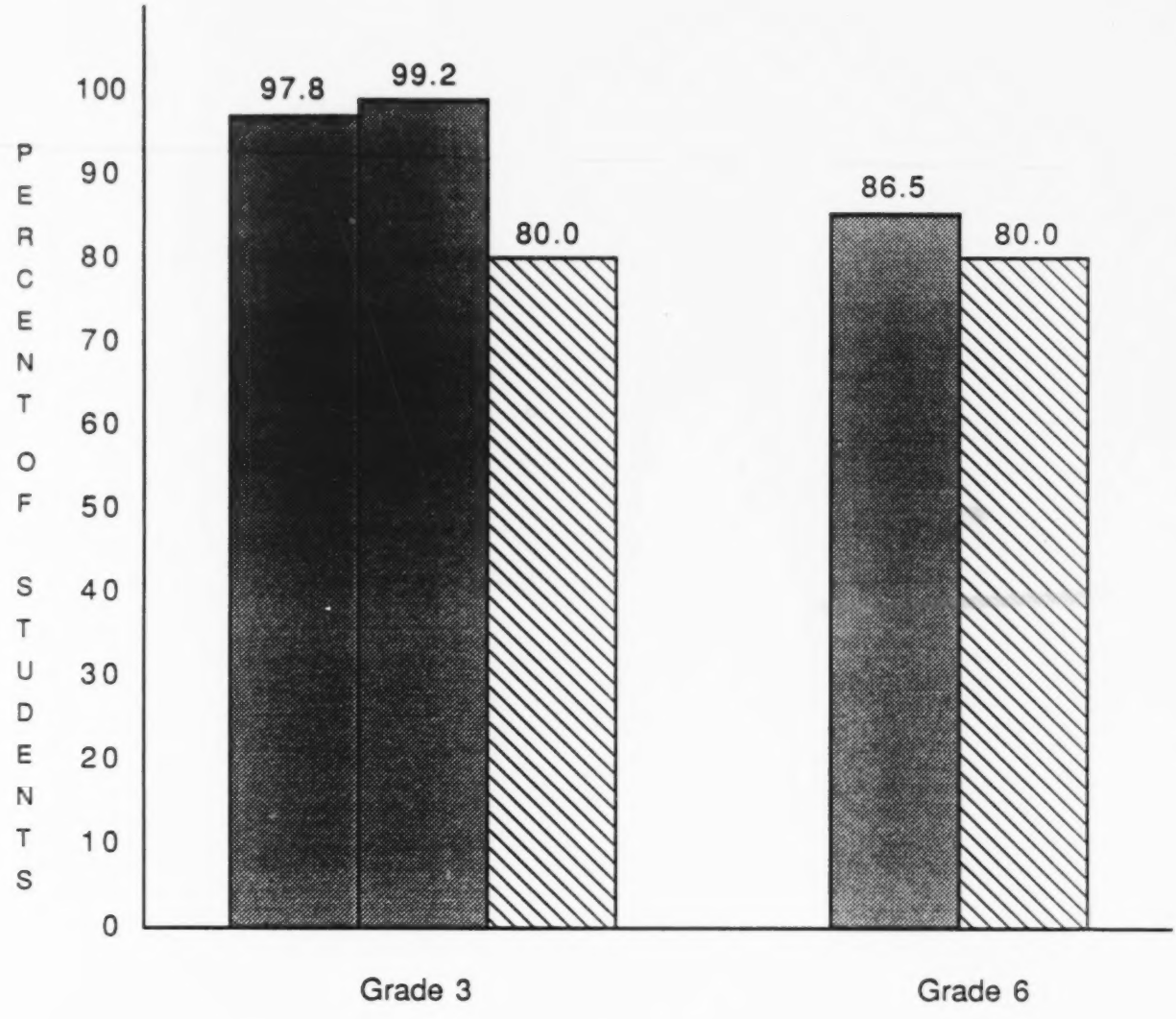
Less than half (42.6%) of the junior high school students responded with the correct answer to their nutrition question, and a lower percentage (32.8%) said they practiced good nutrition. The high school student assessment contained four nutrition questions. Although relatively high percentages of the students got the correct answers, 81.1%, 84.5%, 89.3% and 83.9%, only 38.1% said they always or usually chose to eat food good for their health. (See Figure 2).

PHYSICAL EXERCISE. All four grade levels were tested on their knowledge about physical exercise and asked about their exercise program. A very high percentage of the third graders, 96.1% and 96.4%, responded with the correct answer to their knowledge questions, while 23.8% of them said they always or usually ran, jumped, or did other physical activities when they played. Among the sixth graders, 84.0% had the correct response to the knowledge assessment question, while 58.3% said they participated in physical activities.

A low percentage (38.5%) of junior high school students said they always or usually participated in physical exercise, and a slightly lower percentage responded with the correct answer to the physical exercise question. The high school knowledge test had three questions regarding physical exercise. Fairly high percentages of students were correct in their response to the questions, 84.5% 78.9% and 89.3%, while less than half said they always/usually exercised regularly. (See Figure 3).

SUBSTANCE ABUSE. Note that in the area of pedestrian safety, nutrition, and physical exercise the higher the percentages of knowledge and practice, the better. In the area of substance abuse, the higher the percentages of knowledge and the lower the percentages of practice the better.

Figure 1.
STUDENTS' KNOWLEDGE AND PRACTICE OF PEDESTRIAN SAFETY

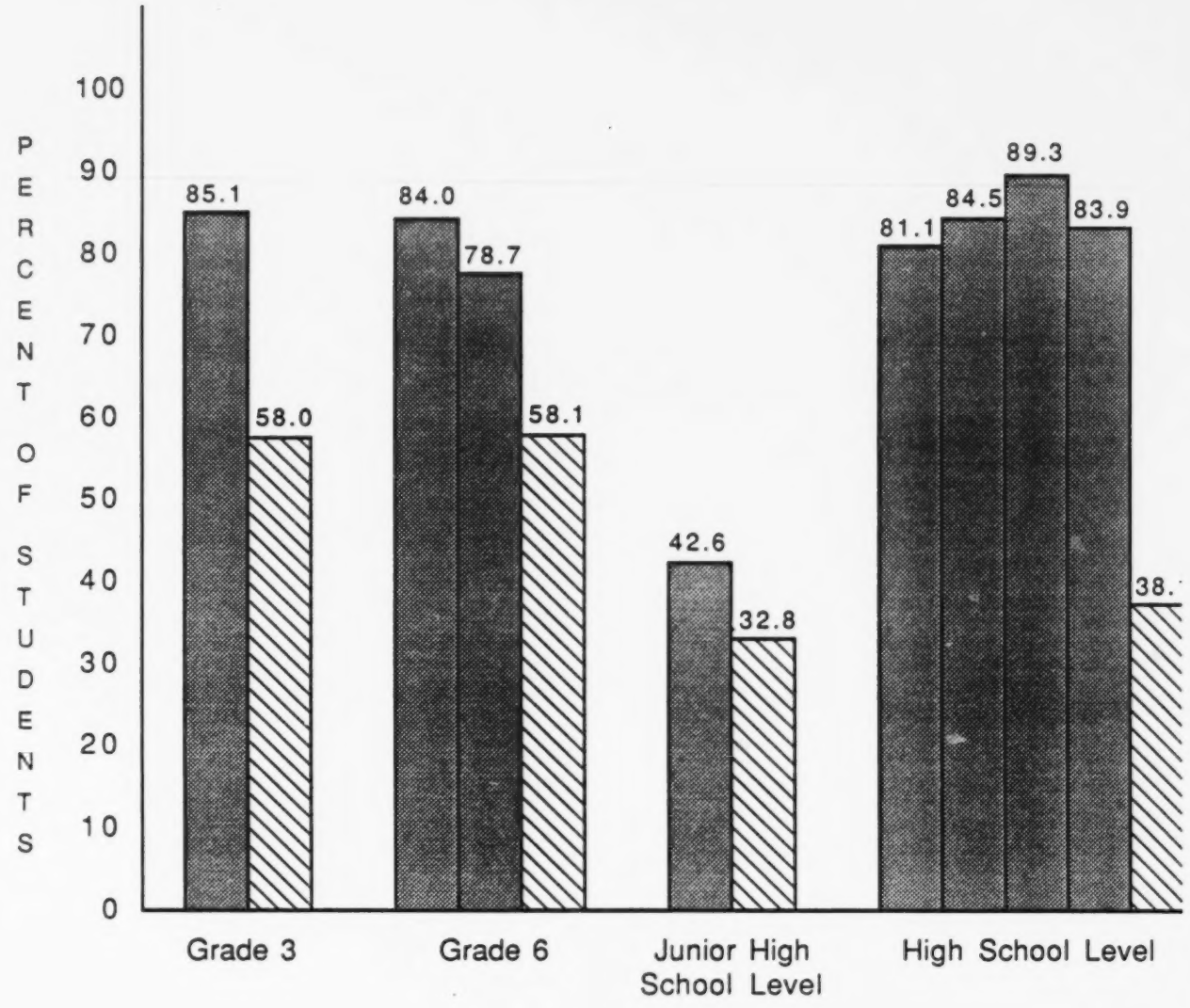


Students with Correct Response to Pedestrian Safety Questions
(Each bar represents one question)

Students Always/Usually Practicing Pedestrian Safety
(The higher the bar, the better the practice)

Figure 2.

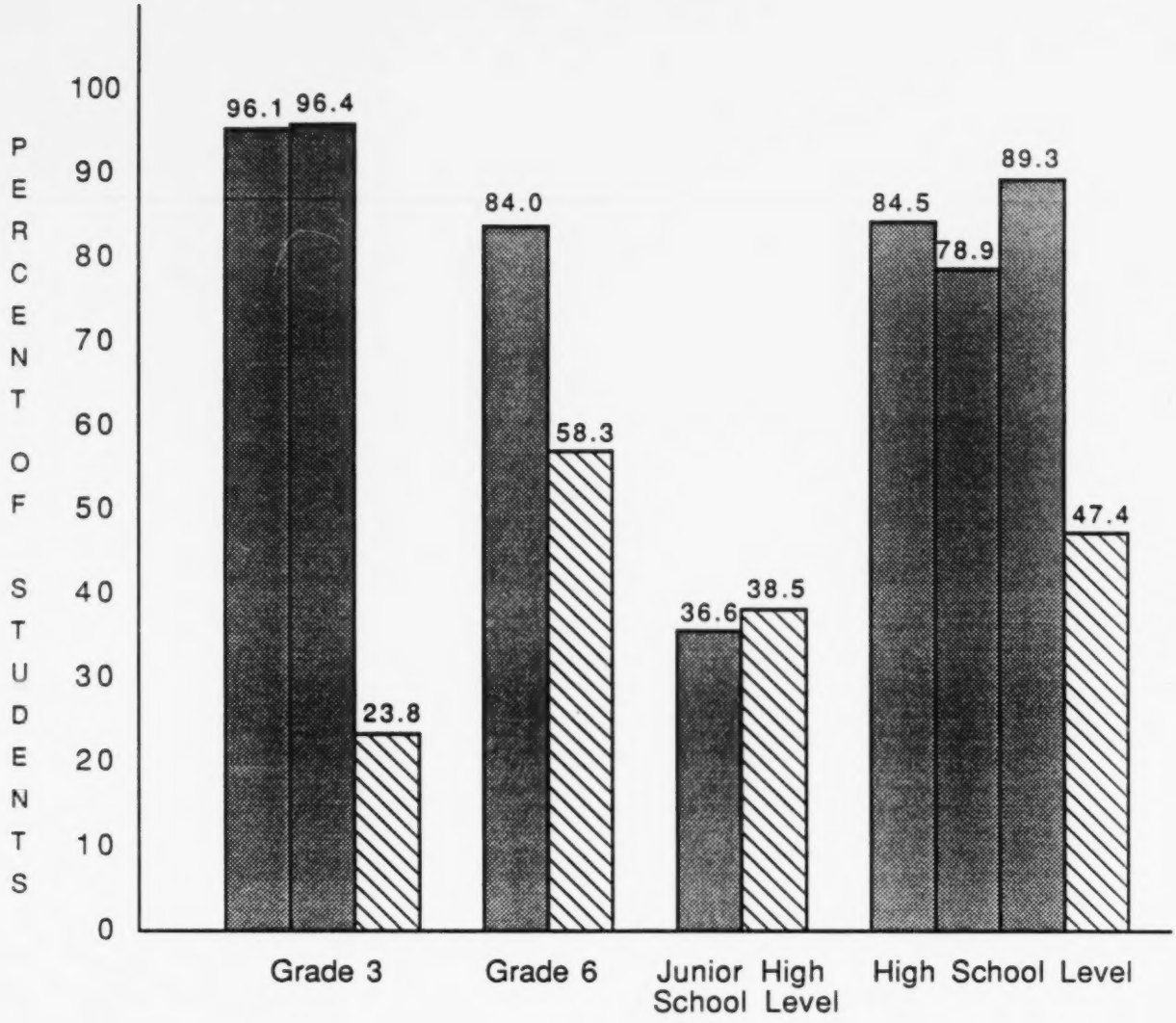
STUDENTS' KNOWLEDGE AND PRACTICE OF GOOD NUTRITION



Students with Correct Response to Nutrition Questions (Each bar represents one question)

Students Always/Usually Choosing to Eat Foods Good for Their Health (The higher the bar, the better the practice)

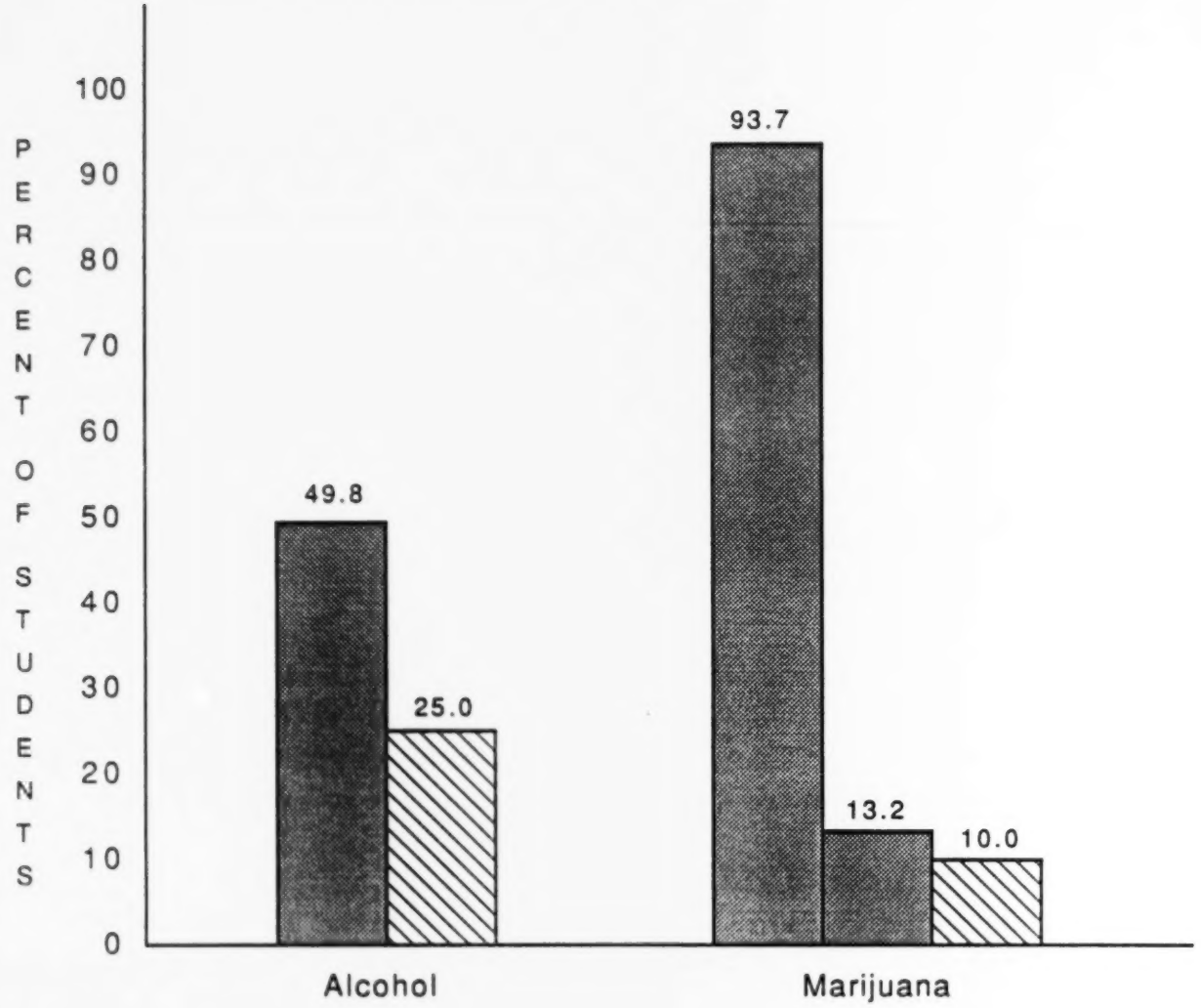
Figure 3.
STUDENTS' KNOWLEDGE AND PRACTICE OF PHYSICAL EXERCISE



Students with Correct Response to Physical Exercise Questions (Each bar represents one question)

Students Always/Usually Exercising Regularly (The higher the bar, the better the practice)

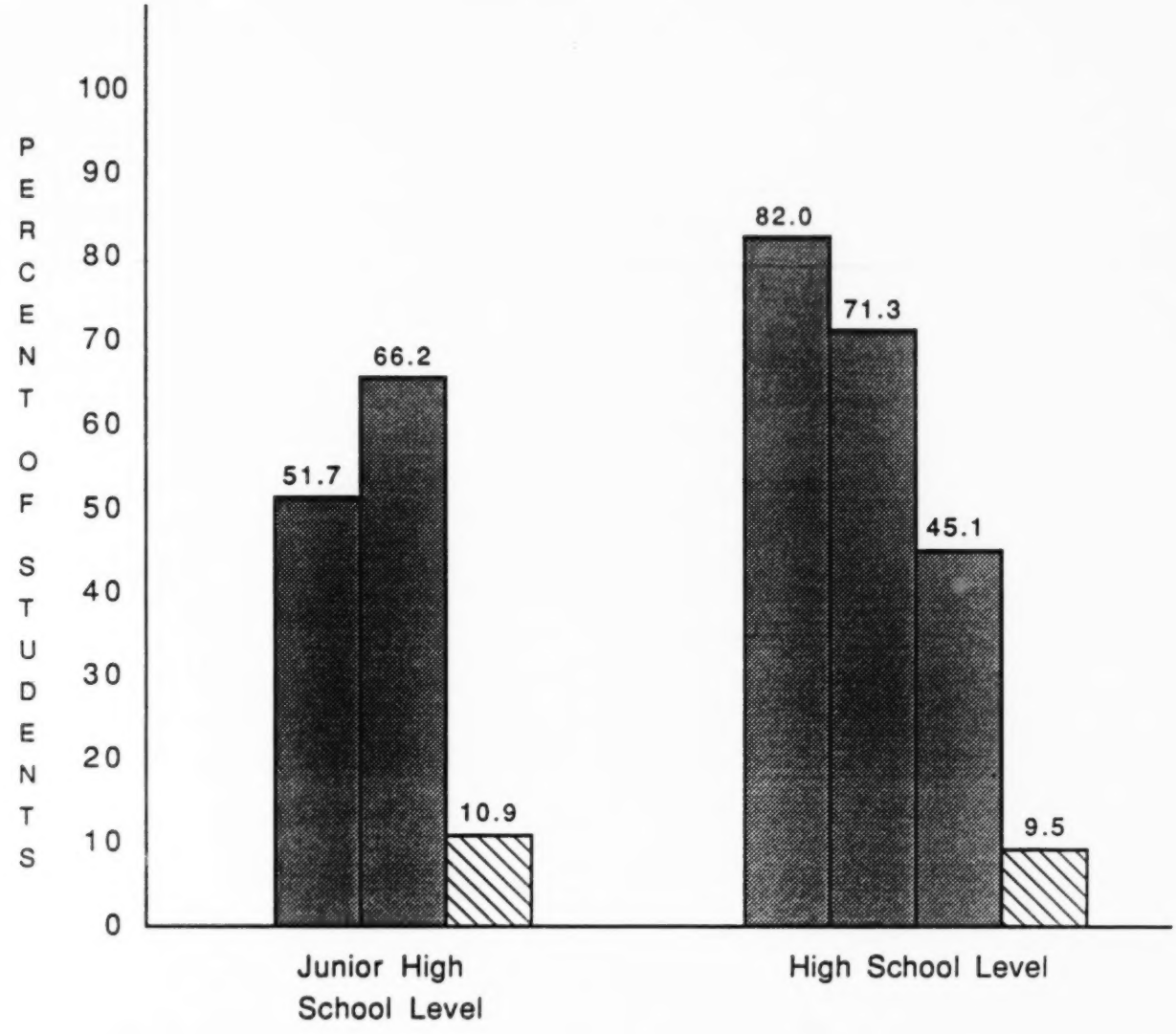
Figure 4.
JUNIOR HIGH SCHOOL STUDENTS'
KNOWLEDGE AND USE OF ALCOHOL AND MARIJUANA



Students with Correct Response to Alcohol/Marijuana Questions
(Each bar represents one knowledge question)

Students Sometimes or Often Use Alcohol/Marijuana
(The lower the bar, the lower the use)

Figure 5.
STUDENTS' KNOWLEDGE AND USE OF "OTHER DRUGS"*



Students with Correct Response to "Other Drug"* Abuse Questions
(Each bar represents one knowledge question)

Students Sometimes or Often Use Drugs
(The lower the bar, the lower the use)

* Illegal drugs other than cigarettes, alcohol and marijuana.

The junior high students were asked about their knowledge and use of alcohol and marijuana. Slightly less than half of the students did not know the long term effects of alcohol abuse, and 25.0% said they used alcohol sometimes or often. (See Figure 4).

Two questions about marijuana were on the junior high student knowledge test. While 93.7% said they knew peer pressure could be a reason for marijuana use, 13.2% were not able to correctly answer the question regarding the effects of marijuana. Ten percent of the junior high students said they sometimes or often used marijuana. (See Figure 4).

Students in junior high and high school were asked about their knowledge and use of "other drugs"[2]. The junior high students' responses to their two knowledge questions were correct for moderately low percentages (51.7% and 66.2%) of the students. About 11% of them said they sometimes or often used drugs. The high school students were asked three questions. The percentage of students with the correct answer were 82.0%, 71.3% and 45.1%. About 10% said they were users sometimes or often. (See Figure 5).

Students' Attitude About Health. A moderately high percentage of students in the sixth grade, junior high and high school said that health is important, but only about half of them said they enjoy learning about health. A high percentage of students in grade three said they liked learning about health.

Table 1.
Students' Attitude Toward Health Class/Lessons
Percentages By Grade Level

Grade Level	I Like Learning. . .*	Importance of Health. . .**
3 (N=365)	87.0	***
6 (N=369)	53.1	86.7
IS (N=320)	52.2	84.4
HS (N=283)	56.9	84.1

* Students reporting that they strongly agreed or agreed with the following statement: I like learning about health.
** Students reporting that they strongly agreed or agreed with the following statement: Learning about health is just as important as learning how to read, write, and do arithmetic.
*** Grade 3 students were not asked to respond to this item.

Observed Lessons. On the first round of observations we found that 23.9% of classes, included awareness of values, attitudes or beliefs or lessons on health skills. In the second round, 33.0% did so.

Student Engagement Rate on Classroom Activities. Student engagement rate was calculated to be 78.1% on task, 12.0% not engaged and 9.9% interim. The percentages were based on 2,692 time-sample "moments." The following table lists the frequencies by grade level.

Table 2.
Frequency of Time-Sample "Moments"
By Grade Level

Grade	Frequency	Percent
3	666	24.7
6	424	15.8
JH	767	28.5
HS	835	31.0
Total	2,692	100.0

Teacher Survey. Over half of the teachers, 54.4%, reported that they included problem solving and decision-making skills in their curriculum. The following table displays the number of surveys
returned.

Table 3.
Frequency of Returned Teacher Surveys
By Grade Level

Grade	Surveys Returned	Percent
3	16	28.1
6	14	24.6
JH	13	22.8
HS	14	24.6
Total	57	100.1

DISCUSSION

The results should be viewed with two limitations in mind: (a) not all the knowledge questions used in this study were closely aligned with the corresponding behavior item and (b) the data are generalizable to the Hawai'i public school population.

Students' knowledge was consistently better than their health practice in the areas of pedestrian safety, nutrition, physical exercise, and substance abuses with the exception of the students in junior high in the area of physical exercise. However, the junior high students' knowledge and practice of physical exercise were both low. The junior high students were also low in their knowledge and practice of good nutrition.

The disparity between knowledge and a practice was not as great in some health subject areas as in others. The differences were less in pedestrian safety than they were in nutrition and physical exercise. Knowledge in nutrition and physical exercise was moderately high and practice was low, with the exception of the junior high level as noted earlier.

Knowledge of secondary school students about substance abuse was moderate to low. Ten to twenty-five percent rates in the use of alcohol, marijuana and "other drugs"[2] indicate that we are far from being a drug-free society.

How then can the knowledge and practice be made congruent? Knowledge is one of the factors that affect behavioral change. As defined by the President's Committee on Health Education, "Health education is a process which bridges the gap between health information and health practices."[4] What then will bridge the two such that knowledge and practice will be congruent? The data in this study have just touched on a few issues which may explain the gap. The data show that while a moderately high percentage of teachers include values awareness in their health curriculum, only about half of them include decision-making and problem solving skills. A low percentage of the classes observed included lessons in awareness of values, attitudes or beliefs or lessons in health-related skills. The rate of academic engagement for all students was moderately higher than that which has been found in many other time-on-task studies. This study has also indicated a discrepancy between the moderately high percentage of students reporting that they feel health is important and the moderately low percentage of students reporting that they like learning about health.

The data suggested the need to improve student knowledge and behavior in health especially in substance abuse. Students' academic engagement time in class seemed adequate. The data also suggested that teachers need not spend much time convincing students that health is worth studying but may need to put more effort in increasing students' interest in learning about health. The need for more teachers to include health skills in their curriculum is suggested. A command of health skills will increase the probability of applying knowledge to affect positive health behaviors.

The study was an attempt compare the health knowledge and practices of students. Further research is needed to provide more information on the effects of enabling factors such as problem solving, decision-making, and assertiveness skills and predisposing factors such as student attitudes.

Footnotes

1. Green, Kreuter, Deeds, Partridge, Health Education Planning, 1980, Mayfield Publishing Company, Page 7.

2. For the purposes of this study "other drugs" is defined as drugs other than alcohol, marijuana and cigarettes.

3. Office of Instructional Services, Department of Education State of Hawai'i, Health Education Survey, Pub. No.TAC 72-4017 (September 1, 1971).

4. Green, Kreuter, Deeds, Partridge, Health Education Planning, 1980, Mayfield Publishing, page 4.

REFERENCES

Bruhn, J.G., & Parcel, G.S. (1982). Current knowledge about the health behavior of young children: a conference summary. *Health Education Quarterly, 9,* 142/238-166/262.

Flora, June A., et al. (1986). *The effects of a behaviorally oriented tenth grade nutrition curriculum.* Bethesda, MD: National Heart and Lung Institute. (ERIC Document Reproduction Service No. ED 269 387)

Guba, E. G., & Lincoln, Y. S. (1981). *Effective evaluation.* San Francisco: Jossey-Bass.

Iverson, D.C., & Portnoy, B. (1977). Reassessment of the knowledge/attitude/behavior triad. *Health Education, 8,* 31-34.

James, Gordon B. (1984). *Selected health behaviors and associated psychological variables among a group of middle-school students.* Paper presented at the Annual Meeting of the Northern Rocky Mountain Educational Research Association, Jackson Hole.

Lammers, Jane W., et al. (1984). The effects of the SHCP on selected aspects of decision-making among fifth graders. *Health Education, 15,* 14-17. (From ERIC abstracts)

Office of Instructional Services, Department of Education, State of Hawai'i, Health Education Survey, Pub. No. TAC 72-4017 (September 1, 1971).

Prue, D.M., Wynder, E.L., Scharf, L.S., & Resnicow, K.A. (1987). Health education and behavioral analysis. *Education and Treatment of Children, 10,* 19-32.

Riggs, R.S., & Noland, M.P. (1984). Factors related to the health knowledge and health behavior of disadvantaged black youth. *Journal of School Health, 54,* 431-434.

Stone, E.J. (1985). School-based health research funded by the National Heart, Lung and Blood Institute. *Journal of School Health, 55,* 168-174.

Tikunoff, W. J. (1983). *An emerging description of successful bilingual instruction.* San Francisco: Far West Laboratory for Educational Research and Development.

Wynder, E.L., & Prue, D.M. (1985). Reshaping the future of health education. *Journal of School Health, 55,* 214.